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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,333	09/23/2003	Gene Frederic Baltz	81072969/202-1464	2332

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EXAMINER

LIN, ING HOUR

ART UNIT PAPER NUMBER

1725

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/605,333

Applicant(s)

BALTZ ET AL.

Examiner

Ing-Hour Lin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10 and 11-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 10, line 4-5, "a first main bearing" is not supported in the specification, wherein -bearing journal—is disclosed. In claims 11-17, there is a lack of support for the claimed features such as "blowing sand into each of a plurality of core boxes ...; setting the resin coated sand ...; assembling the plurality of core boxes with oil gallery to form a core box assembly" in claim 11, and the claimed "urethane resin" in claim 12 and "vent screed" in claim 13.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Sorensen.

Sorensen (col. 1, lines 1+) teaches the claimed metal casting core assembly (sand core plates 1-16) and method for casting an iron crankshaft for a multi-cylinder internal combustion

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engine, wherein the plates are secured by four core bolts (tie rods 22) and nuts. The plates have cavities (depressions) for casting main bearing journals (bearings), connecting rod pin (crank pin) and counterweights. Locator pins and the corresponding recesses (triangularly shaped keys 32 and keyways) are provided for mating and locking the plates.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen in view of Bullock.

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Sorensen fails to teach the use of oil gallery cores.

However, Bullock (col. 5, lines 60+) teaches the use of resin coated oil gallery cores 100a, 100b, 102 having front end 126 and rear end 128 incorporated with other cores 42, 44 for forming an interconnecting crankshaft (camshaft) gallery and oil gallery in a cast cylinder block for the purpose of effectively casting oil-feeding holes. It would have been obvious to one having ordinary skill in the art to provide Sorensen oil gallery cores as taught by Bullock in order to effectively cast oil-feeding holes.

8. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen in view of Fowlkes et al.

Sorensen fails to teach the use of a metallic insert in a cavity.

However, Fowlkes et al (col. 4, lines 66+) teach the use of a metallic insert (counterweight) 50 positioned by locator pin 62 to the hole 60 of the mold cavity 72 for the purpose of effectively casting counterweight. It would have been obvious to one having ordinary skill in the art to provide Sorensen the use of metallic insert as taught by Fowlkes et al in order to effectively cast counterweight.

9. Claims 11-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen in view of Bullock and further in view of Tanaka et al.

Sorensen in view of Bullock fails to teach the use of setting the sand coated with resin.

However, Tanaka et al (col. 4, lines 7+) teach the use of setting the resin coated sand for the purpose of effectively forming molding shell for casting ductile iron crankshaft (col. 5, lines 22+). It would have been obvious to one having ordinary skill in the art to provide

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Sorensen in view of Bullock setting the resin coated sand for forming core plates as taught by Tanaka et al in order to effectively forming molding core plates for casting ductile iron crankshaft.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen in view of Bullock and further in view of Tanaka et al and Witte et al.

Sorensen in view of Bullock and further in view of Tanaka et al fails to teach the use of a vent screed.

However, Witte et al (col. 3, lines 31+) teach the use of vent screed (bore) 30 connected to a catalyst source 103 for the purpose of effectively venting and curing the core 107. It would have been obvious to one having ordinary skill in the art to provide Sorensen in view of Bullock and further in view of Tanaka et al vent screed (bore) 30 as taught by Witte et al in order to effectively vent and curing the core plate.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable Sorensen in view of Bullock and further in view of Tanaka et al and Fowlkes et al.

Sorensen in view of Bullock and further in view of Tanaka et al fails to teach the use of a metallic insert.

However, Fowlkes et al (col. 4, lines 59+) teach the use of metallic insert (counterweight) 50 of tungsten steel (density 7.8 g/cm^3 to 8.0 g/cm^3) positioned by locator pin 62 to the hole 60 of the mold cavity 72 for the purpose of effectively casting counterweight. It would have been obvious to one having ordinary skill in the art to provide Sorensen in view of

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Bullock and further in view of Tanaka et al the use of metallic insert as taught by Fowlkes et al in order to effectively cast counterweight.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sorensen in view of Bullock and further in view of Tanaka et al and Marquis.

Sorensen in view of Bullock and further in view of Tanaka et al fails to teach the use of inserting lightening cores.

However, Marquis (col. 2, lines 42+) teaches the use of inserting lightening cores (hollow core insert) 31 for the purpose of effectively casting metal wheel with reduced weight. It would have been obvious to one having ordinary skill in the art to provide Sorensen in view of Bullock and further in view of Tanaka et al inserting lightening cores as taught by Marquis in order to effectively casting a crankshaft having a reduced weight.

Allowable Subject Matter

3. Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (8:00-5:30) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

f.h.d.

I.-H.Lin

7-19-04

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